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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,610	02/18/2004	Shigeyasu Morihiro	21581-00318-US	1339

30678 7590 01/11/2008
CONNOLLY BOVE LODGE & HUTZ LLP
1875 EYE STREET, N.W.
SUITE 1100
WASHINGTON, DC 20036

EXAMINER	
METZMAIER, DANIEL S	

ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
01/11/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/779,610	MORIHIRO ET AL.	
	Examiner	Art Unit	
	Daniel S. Metzmaier	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4 and 7-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4 and 7-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1, 3-4, and 7-11 are pending.

Claim Objections

1. Claim 9 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 9 sets forth that "the organic fine particle is meth(acrylic acid base emulsion or polymethyl (meth)acrylate-based cross-linked substances". Since claim 1 requires the organic fine particles are cross-linked substances, it is unclear how the could also be a (meth)acrylic acid base emulsion, which is claimed in the alterative to polymethyl(meth)acrylate-based cross-linked substances.

The species to "(meth)acrylic acid base emulsion" as "the organic fine particle" appears to be outside of the scope of the organic fine particles of claim 1.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession

of the claimed invention. It is unclear from the original disclosure cited by applicants that applicants had possession of the temperature limitation as now claimed in claim 8.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 3-4 and 7-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear how an emulsion has a glass transition temperature (T_g), how said T_g was measured and what said limitation is intended to limit. The T_g is the temperature that an amorphous material (e.g., glass or polymer) changes from a brittle vitreous state to a plastic state. See Lewis, Richard J., Sr. (2002). Hawley's Condensed Chemical Dictionary (14th Edition). John Wiley & Sons. Online version available at: http://www.knovel.com/knovel2/Toc.jsp?BookID=704&VerticalID=0. An emulsion is typically neither in a vitreous or plastic state.

To the extent applicants intend the T_g of the polymers in said emulsion, it is unclear whether applicants intend the unspecified emulsion polymer, the particles dispersed in the emulsion or both the polymer particles and the emulsion polymers combined.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1, 4 and 7-11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Salter et al, US 5,688,853. Salter et al (abstract) is directed to soil resistant coatings comprising a low T_g polymer dispersion and a high T_g polymer dispersion in a respective volume ratio of 0.4:1 to 1.4:1. Salter et al (column 4, lines 59 et seq) disclose the low and high T_g dispersions are made up of copolymers and may further comprise functional monomers and cross-linking as desired.

Salter et al (column 5, lines 17 et seq) further teaches modification of the polymer gel structure by the incorporation of polyfunctional acrylates and methacrylates provided film formation is not unacceptably compromised.

Salter et al (column 5, lines 26 et seq) discloses the polymer dispersions may be prepared by known means including emulsion polymerization including polymers that are sterically stabilized by groups anchored to the particle surface.

Salter et al, (column 6, lines 16 et seq) discloses the low T_g dispersion has a preferred T_g -10° C to -20° C to advantageously provide good film properties. Salter et al (column 6, lines 35 et seq) discloses the high T_g dispersion has a 10° C to -20° C of up to 110° C and a preferred T_g of 50° C to 70° C and said dispersion (column 7, lines 1 et seq) comprise particles preferably of 200 nm or less (1000 nm = 1 μm), which reads on the claimed less than 15 μm particle size.

Salter et al (columns 4-7; examples; claims) disclose the claimed compositions.

To the extent that Salter et al differs from the claims in the sufficiency of the disclosure, the cross-linking of the high T_g dispersion particles, the properties of a lack of melting or decomposition at 160° C, the Salter et al reference clearly contemplates high T_g particulate dispersion that are cross linked. Salter et al, (example 24) discloses baking at 232° C and at least suggest the melting and decomposition stability as would be desired for a coating composition.

10. Claims 1, 4 and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salter et al, US 5,688,853, as applied to claims 1, 4 and 7-11 above, and further in view of Snyder, US 5,308,890, and/or Nippon Shokubai, PRODUCT LIST, Basic

Chemicals/Functional Chemicals. Salter et al (abstract) is directed to soil resistant coatings comprising a low T_g polymer dispersion and a high T_g polymer dispersion in a respective volume ratio of 0.4:1 to 1.4:1 as set forth in the preceding rejection over the same.

To the extent the Salter et al reference differs from the claims in the cross-linked particles employed in the emulsions, the use of cross-linked particles having high T_g were known in the prior art and would have been obvious to those having ordinary skill in the art at the time of applicants' Invention as shown by Snyder or Nippon Shokubai.

Snyder is cited in the Salter et al reference (see references cited) and would be readily combinable with Salter et al as related art. Snyder (abstract; column 3, lines 47 et seq; examples and claims) disclose hard, cross-linked latex particles formed from polymers having a T_g of 20 – 160 C, preferably 40-100 C.

Snyder (column 3, lines 19 et seq) disclose the Snyder compositions are advantageously used in aqueous coating compositions for the advantages of adequate film formation, a desired balance of flexibility, block resistance, print resistance, and hardness properties.

Nippon Shokubai is a product list that includes (page 12) EPOSTAR MA as cross-linked polymethacrylate resin, fine sphere particle, white powder. Nippon Shokubai (page 12) further list under the "Applications" column:

> "No softening property. Excellent in acid, alkaline and solvent resistance. Superior mechanical strength such as impact resistance. Insoluble and infusible Matting agent. Light diffusing agent, Slipping agent, Anti-blocking agent, coating agent, various modifiers and fillers." (emphasis added).

Nippon Shokubai clearly contemplates the use of EPOSTAR MA in coating compositions and was commercially available at the time of applicants' invention. Nippon Shokubai (page 19) indicates a publication in Japan of June 2000.

These references are combinable because they teach latex particles. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ the hard cross linked latex particles for the advantageous properties taught in the Snyder reference and the functions disclosed in the Nippon Shokubai reference.

Furthermore, the skilled artisan having been aware of the EPOSTAR MA materials as set forth in the Nippon Shokubai reference would have concluded them to be a logical substitute for the hard particles disclosed in the Salter et al reference and/or those particles disclosed in the Snyder reference for the desired advantages cumulatively taught in the references.

Response to Arguments

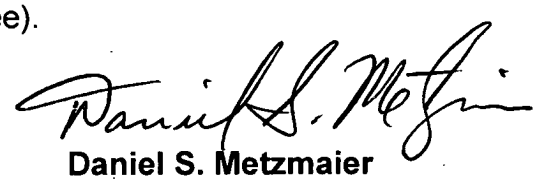
11. Applicant's arguments with respect to claims 1, 3-4, and 7-11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David W. Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel S. Metzmaier
Primary Examiner
Art Unit 1796

DSM